

# CALIFORNIA STATE BOARD OF HEALTH

## MONTHLY BULLETIN

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## REGULAR MEETINGS.

The meetings of the California State Board of Health are held regularly the first Saturday of each month, but the quarterly meetings required by law to be held at the Capitol of the State are ordinarily designated as January, April, July, and October.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all communications to the

SECRETARY, Sacramento, California.



# MAY BULLETIN.

## COMMENTS.

### Seasonal Variations in Disease Prevalence.

Why should there be any seasonal variations in prevalence of diseases? This has been definitely answered in certain diseases. For example, it has been discovered that malaria is only transmitted through the agency of a certain species of mosquito, and this mosquito either dies at the beginning of winter or hibernates during the cold weather. Thus the malaria parasite has no chance to be distributed during the winter season, but runs up a heavy score of cases during the summer months. The causes of seasonal variations for some other diseases are understood, but for the majority no adequate explanation exists as yet.

In California ten diseases caused a few more than 31,000 deaths in three years (Jan. 1, 1910-Dec. 31, 1912).

The table below presents certain facts that are significant. Of this number (31,000), 22,725 were due to tuberculosis and pneumonia, which are ordinarily considered to be respiratory diseases; and 5,367 were due to diarrhoea and typhoid fever, which are classed as intestinal diseases. In other words 90.6 per cent of these deaths were due to four of the ten diseases; 73.3 per cent being due to the first two. Of the tuberculosis and pneumonia cases 40.8 per cent occurred in December, January, February and March, as against 26.6 per cent occurring in June, July, August and September. On the other hand, 44.9 per cent of the diarrhoea and typhoid fever cases occurred in June, July, August and October, as against 20.9 per cent occurring in January, February, March and April.

		Median age at death	Expectation of life	Ratio of preventability	Number which should have lived	Chief factors in preventing deaths.
1. Tuberculosis ---	14,997	33 years	33 years	75%	11,247	Housing, health, early treatment.
2. Pneumonia ----	7,728	37 years	30 years	45%	3,478	Good general health.
3. Diarrhea -----	4,004	1 year	50 years	60%	2,402	Clean milk; good food.
4. Typhoid fever--	1,363	26 years	38 years	85%	1,159	Pure water; typhoid vaccination.
5. Meningitis -----	1,079	2 years	54 years	70%	755	Antimeningitis serum.
6. Whooping-cough	668	1 year	50 years	40%	267	Avoidance of contacts.
7. Diphtheria -----	538	3 years	54 years	70%	377	Early diagnosis; diphtheria anti-toxin.
8. Measles -----	414	1 year	50 years	40%	166	Avoidance of contacts.
9. Scarlet fever----	183	3 years	54 years	50%	92	Avoidance of contacts.
10. Smallpox -----	26	32 years	34 years	75%	20	General protective vaccination; immediate vaccination after exposure.

	Total.	Number and per cent under three years.	Number and per cent 26-37 years.	Total deaths, all causes.	Per cent of these ten to all causes.
1. January -----	3,077	454 (14.7)	2,623 (85.3)	9,241	33.3
2. December -----	2,930	568 (19.2)	2,392 (80.8)	10,149	29.2
3. March -----	2,858	502 (18.6)	2,356 (81.4)	9,098	31.4
4. February -----	2,707	442 (16.3)	2,265 (83.7)	8,473	31.9
5. May -----	2,679	543 (20.3)	2,136 (79.7)	8,643	31.0
6. April -----	2,519	482 (19.1)	2,037 (81.9)	8,309	30.3
7. November -----	2,519	548 (21.8)	1,971 (78.2)	8,541	29.5
8. June -----	2,465	738 (29.9)	1,727 (70.1)	8,028	30.7
9. July -----	2,400	746 (31.1)	1,654 (68.9)	8,149	29.5
10. October -----	2,368	651 (27.5)	1,717 (72.5)	8,265	28.7
11. August -----	2,278	644 (28.9)	1,634 (71.1)	7,836	29.1
12. September -----	2,160	560 (25.9)	1,600 (74.1)	7,634	28.3
	31,000	6,878 (22.2)	24,112 (77.8)	102,366	30.3



In the second table, printed above, the months are arranged in order of the prevalence of the diseases listed. It will be noted that December to March inclusive stand at the top of the list, while July to October inclusive stand at the bottom. It happens as a rule that the winter months listed have the majority of cold, wet, cloudy days with strong, penetrating winds, while the summer months have the majority of warm, dry, cloudless days, with gentle winds. These climatic conditions supplement our industrial conditions which demand a maximum number of persons for heavy indoor work during the winter months, and shift this maximum to outdoor work during the summer period. The amusements and general activities of the people also lead indoors in winter and out into the open in summer.

Undoubtedly these factors play an important part in the seasonal distribution of these diseases, but obviously they can not account for everything. For example, 24,112 of the total number (77.8 per cent) died of the diseases claiming their victims between the median ages of 26-37 years, while 6,878 (22.2 per cent) represented the median ages of 1-3 years, and the maximum number of deaths in the adult group occurred during the winter months, in contrast to the maximum number among the infant group occurring in the summer months. Babies under three years of age live closely at home and as a rule go where their parents go, hence will get outdoors in California when their parents do. Differences in character of food supplies and the increased dangers of contaminated milk supplies in summer are factors related to this. Habits of bathing, character of clothing, and other items of personal hygiene are factors to be considered in any study of this problem.

The ten diseases included in the above tables were selected because they are all communicable diseases believed to be caused by specific micro-organisms—in six\* of them these organisms are known, in four† science has not yet positively identified any organisms as causative, but has developed evidence to indicate that they are due to the activities of micro-organisms. None of the ten are limited to transmission by any insect. All of them, in varying degrees, are recognized as contact diseases, *i. e.*, diseases in which close contact with a patient having the disease is likely to result in contracting it; but in pneumonia, diarrhoea and meningitis this danger from contact requires special unknown or little understood conditions in order to become of any importance, and in tuberculosis and typhoid fever proper observance of simple and practical precautions will prevent the danger from contact. Therefore, in this group of five of the ten diseases, the patients themselves are chiefly a factor by being reservoirs from whose bodies disease-germs escape, which indirectly through a multiplicity of methods succeed in entering the bodies of other persons, a certain percentage of whom will be unable to withstand this invasion and consequently will develop the disease. This group includes 94.1 per cent of the 31,000 deaths (29,171). The remaining group of five diseases—whooping-cough, diphtheria, measles, scarlet fever, smallpox—are markedly a group of contact diseases, but constitute only 5.9 per cent (2,829) of these deaths.

\*Tuberculosis, pneumonia, diarrhoea, typhoid, meningitis, diphtheria.

†Whooping-cough, measles, scarlet fever, smallpox. In the recent investigations of whooping-cough an organism seems to have been "proved-up" as the specific cause.



In the first group—tuberculosis, pneumonia, diarrhœa, typhoid, meningitis, as well as in the second group—diphtheria, whooping-cough, measles, scarlet fever, smallpox—cases occur every month in the year. But with the exception of meningitis the conditions governing the prevention of each disease in the first group are fairly well understood, while in the second group, except for diphtheria, these conditions are not well understood.

With proper organization and competent trained men "on the job" all the year round, and with the active co-operation of the people 19,963 out of the 31,000 victims of these ten diseases, it is estimated, might have been alive and well to-day with from thirty to fifty more years of useful life ahead of them. This is the significant and tragic fact about these ten diseases which are popularly supposed to be seasonal in prevalence. The value of human life in terms of money is always repugnant, but the prevention of disease and death must be presented in money estimates for equipment, salaries, etc., for those engaged in the prevention work. A good slave fifty years ago, who was physically sound and without education or technical training, was worth \$1,500. If it be conceded that freemen and children as an average are to-day worth as much, then the public policy of neglecting the enforcement of recognized preventive measures against these ten diseases has cost the State \$30,000,000 in the past three years, or \$10,000,000 per year. Four per cent interest on \$10,000,000 is \$400,000 annually.

\* \* \* \* \*

**Popularizing  
Preventive  
Medicine.**

"Preventive medicine" is defined in dictionaries as "that branch of medical science which aims to prevent or ward off disease by properly directed hygiene, personal and public." Hygiene is defined as "the science that treats of the laws of health in its broadest sense." These are vague definitions, but until recent years they were justified by the vagueness of the subjects they sought to define. Applied preventive medicine and hygiene are almost wholly a twentieth century product, and the twentieth century is only twelve—"going on thirteen"—years of age. It is a wise provision of Nature that mountain climbers get out of breath, for in stopping to regain their breath, they get their minds off the immediate obstacles to the next step, and their horizon broadens out from the immediate environment of their feet, and they see the splendid view below them as well as the inspiring unexplored heights above. It is so in preventive medicine. Already the backward look over the past twelve years presents a wonderful advance, and promises great advances for the future. The results to be achieved in the prevention of disease so largely depend upon the individual co-operation of the citizens that popular education must be one of the chief factors in progress. One of the significant movements of the past five years has been the establishment of welfare departments of industrial enterprises. Competent medical officers are in charge of these departments and are equipped with facilities for examining and advising employees. They also are instructed to prepare and issue brief practical leaflets upon foods, room-ventilation, clothing, sleeping porches, and all the various subjects of personal hygiene.



One insurance company that has taken up this work in a most admirable way, provides the option of a free physical and medical examination of each of its policyholders every two years. This company also maintains a "Health and Happiness League," the members of which are the wives of policyholders. The certificate of membership contains the following:

"----- having promised that she will do all in her power to help the ----- to improve the health of its policyholders, and that she will do all in her power to preserve her own bodily health and add to the happiness of others, is hereby declared a member -----."

The literature sent to these members is accurate, interesting, well illustrated, and covers everything about the home related to health, from the baby to the Sunday afternoon outing. All this has been established in the line of good business policy. It pays to keep policyholders well and happy; they live longer, and have money to pay premiums; more premiums mean a larger volume of business each year. The success of this policy has appealed to many corporations, which have need for healthy, happy employees.

The influence of such educational work can not be overestimated in promoting the health conservation movement. But the attention of the owners and managers of these corporations should be drawn to the fact that the best results of their outlay in this direction will be attained only by supplementing it by the organization of strong sanitary and public health service. The promise of the member of the insurance company's league was to "do all in her power to help ----- improve the health" of her husband and family and "to preserve her own bodily health." It is *not in her power* to do those things for which the public health departments are created.

In the health conservation problem three agencies must always be considered:

1. *The Citizen*—who applies to the maintenance of his own individual health the knowledge of personal hygiene which he possesses.

2. *The Health Department*—which applies to the environment of the citizen, present knowledge of public hygiene and sanitation, and exercises necessary control over the activities and social intercourse of individuals who are temporarily a source of danger to their fellow citizens, by reason of having some communicable disease.

3. *The Physician*—who treats or prevents the recurrence of those diseases which are not communicable or for which science has not thus far demonstrated practical preventive measures which can be carried out by either of the first two agencies.

These three agencies are so closely interrelated that no advance can be made in one without affecting the others. The closest sympathy and co-operation should therefore be fostered among those concerned in forwarding the work of each one.

Among the diseases which still remain almost entirely in the province of the physician may be named four groups which do not contain any popularly known as seasonal diseases and are not communicable—(1) diseases of the nervous system; (2) diseases of circulatory system; (3) Bright's disease and nephritis (kidney diseases); and (4) cancer.



For the three years referred to in the tables for the ten communicable diseases, these four groups caused 37,862 deaths in California. Thirty-six per cent died during the months of December, January, February, March; 32.5 per cent in April, May, June, July; 31.5 per cent in August, September, October, November. The following table is interesting in its bearing on the prevention or rather postponing of non-communicable diseases.

	Median age death.	Expectation of life.	Ratio of cases postponable to all cases of the disease.	Number who should have lived longer.	Prolonged by—
1. Nervous system -----	64	13	35%+	2,200+	Early diagnosis, careful medical supervision, etc.; occupation and living conditions properly adapted to condition.
2. Circulatory system -----	67	12	25%+	4,200+	Early diagnosis, careful medical supervision, etc.; occupation and living conditions properly adapted to condition.
3. Kidney diseases -----	62	16	40%+	2,550+	Early diagnosis, careful medical supervision, etc.; occupation and living conditions properly adapted to condition.
4. Cancer -----	61	14	?%+	?+	Early diagnosis, surgical measures, etc.

The age at death in this group is well advanced, but at least 10,000 out of the 37,862 victims of these diseases might have had their lives prolonged from 12-16 years. This is approximately one out of every four.

It will readily be seen that within his own division of the health-conservation problem, the physician has much to do in the way of prevention and postponement of death. Early diagnosis and personal advice are the chief factors in achieving these results. The work begun by business corporations in popularizing medical and hygienic knowledge should be furthered by similar work by the physicians. The American Medical Association and its component societies have done excellent work in this field of popular education, but thus far their efforts have been largely with the people and in the field of communicable diseases and sanitation, rather than with the physicians themselves, and what the latter should be doing in their own particular field.

The three great national organizations which should work harmoniously and in carefully co-ordinated fields of activity in popularizing practical knowledge of preventive medicine are The National Education Association, The American Public Health Association, The American Medical Association. There are many national and international associations and organizations exerting great and far-reaching influence in preventive medicine, but none of these have the facilities of the three mentioned for directly reaching the rank and file of those persons in each community who must be depended upon to popularize rapidly authentic and wholesome information on preventive medicine subjects. These three organizations, therefore, should seek to supplement and give the widest publicity to the work of the multiplicity of other organizations contributing to the progress of health conservation.



### **Occupational Diseases.**

During one of the legislative committee hearings recently, Mr. Andrew Furuseth, quoting Browning, said "A country is wealthy in proportion to the number of healthy men and women whom it possesses." The picture of an influential labor-leader quoting Browning before a joint committee of the legislature is interesting and sounds like an account of an afternoon tea party, but Mr. Furuseth was very much in earnest; he was arguing for a bill designed to protect the health of certain workingmen. The statement quoted is true and the importance of protecting the health of workmen is great. There exists in Milan, Italy, a special scientific institute for research on industrial diseases, and England, Germany, and other nations have collected much valuable information on occupations in relation to disease. The United States thus far has done little.

Two years ago the legislature of California passed a bill requiring the reporting of all persons ill as a result of working with lead, phosphorus, arsenic, mercury, anthrax or compressed air. The Governor approved the bill, and this year there has been placed before him for consideration a bill providing a farther extension of the list of reportable diseases, and establishing an administrative method for thorough investigations and control of all important conditions favoring occupational diseases.

There will occur June 8-13, 1913, in Rome, the fourth National Conference on Occupational Diseases. An organization, which holds annual meetings in the United States—The National Association for Labor Legislation—has paid particular attention to occupational diseases in this country during the past few years, and has had a marked influence in stimulating interest in the subject. It is to be hoped that in 1915 an exhibit on this subject may be presented in San Francisco. Secretary Andrews of the American association mentioned, stated recently before the National Civic Federation that at least 13,000,000 cases of illness among workers and a money loss of \$750,000,000 annually, had been estimated as due to occupational diseases in the United States.

\* \* \* \* \*

### **The Annual Exodus from the Poorman's Winter Resorts.**

People are accustomed to the migrations of birds and tramps; but few realize the extensive migration of those engaged in seasonal occupations, nor stop to consider what becomes of the lumberman, the miner, laborers in construction camps, and others engaged in occupations which have a closed winter season. The men from these occupations, pursued in an environment of California mountain and rural conditions, come into the cities for four or five months of enforced idleness (or at best irregular city work). They are used to coarse food and rough lodgings; they have limited resources; they fail to see the difference between the wholesome plain fare of meat, potatoes, beans, bread, etc., in the mountains and the unwholesome food of the same character in the cheap restaurants in the cities. Furthermore, they do not understand that the mountain-labor appetite is a false guide in selecting the kind and amount of food they require during these idle winter months. It is the same with lodgings. They do not realize that a bunk, which is one's own in a mountain shack among other bunks in which are sleeping healthy, hard working associates, is a very different



affair from the apparently similar bunks filled by constantly changing and frequently unhealthy men who live in the cheap lodging houses of the city.

For the men of these occupations the inland cities of California are winter resorts, often exerting on their lives and health far more disastrous influences than are exerted by the summer resorts on the lives of families and people who go into the mountains without knowing how to find out whether the water supplied them is pure and the accommodations given them are sanitary.

The State Board of Health has been studying this problem for several years, and expects to be able during the next year to make a careful survey of the living conditions of these winter resorts, and particularly to investigate the dietary standards required by these men during the intervals between their employment in seasonal occupations.

## REPORT OF BUREAU OF ADMINISTRATION.

JOHN F. LEINEN, Director.

### Division of Sewage Disposal and Water Supplies.

No formal applications for permits for sewage disposal were received by the Board during April. It is expected, however, that a large number of applications will be made in the near future as soon as the Board, through its Consulting Engineer, is able to determine the exact status of all communities in the State under the terms of Chapter 339 of the Public Health Act, approved April 1, 1911. Those communities plainly coming under the law will then be asked to make formal application without further delay. Up to the present time the organization of the work of this division has been such that no more applications than have already been received could have been considered.

During the month the Board's Consulting Engineer held special conferences with parties concerned relative to the sewage disposal problems of Los Gatos and Stockton, and the proper disposal of the wastes from the Winters cannery.

A comprehensive report upon the sewerage and sewage disposal problem of the city of Placerville was completed and submitted to the Board for action. Work upon the preparation of an exhaustive report upon the present sewerage conditions and the general sewage disposal problem of Orange was continued during the month.



## REPORT OF BUREAU OF VITAL STATISTICS.\*

GEORGE D. LESLIE, Director.

*State Totals and Annual Rates.*—The following table shows for California as a whole the birth, death and marriage totals for the current and preceding months in comparison with those for the corresponding months of last year, as well as the annual rates per 1,000 population represented by the totals for the current and preceding months. The rates are based on an estimated midyear population of 2,671,491 for California in 1913, the estimate having been made by the Census Bureau method with slight modifications.

*Birth, Death and Marriage Totals, with Annual Rates per 1,000 Population for Current and Preceding Months for California: March.*

Month.	Monthly total.		Annual rate per 1,000 population: 1913.
	1913.	1912.	
March—			
Births -----	3,488	3,306	15.4
Deaths -----	3,330	3,363	14.7
Marriages -----	2,167	1,816	9.6
February—			
Births -----	3,270	3,062	16.0
Deaths -----	3,254	3,080	15.9
Marriages -----	2,040	2,184	10.0

The birth and marriage totals for March were much greater in 1913 than in 1912, while the monthly death total was not far from the same each year.

*County Totals.*—The first table which follows below shows the monthly birth, death and marriage totals for the principal counties of the State, the list being limited to counties having a population of at least 25,000 according to the Federal Census of 1910. Totals are also shown for San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), as well as for Los Angeles and Orange counties together.

*City Totals.*—The second of the following tables gives the birth and death totals for the principal freeholders' charter cities, the list including all chartered cities with a census population of at least 15,000 in 1910. Totals are given likewise for San Francisco in comparison with Oakland, Alameda, and Berkeley, the three cities adjoining one another on the east shore of San Francisco Bay, as well as for Los Angeles in comparison with neighboring chartered cities (Long Beach, Pasadena, Pomona, and Santa Monica).

\*NOTE.—The present report is for the month preceding, but one. This order must be followed hereafter because of the publication of the Bulletin during the early part of the month, before the tabulation of records for the preceding month is completed.



*Birth, Death and Marriage Totals, for Principal Counties: March.*

County.	March, 1913.		
	Births.	Deaths.	Marriages.
California -----	3,488	3,330	2,167
Counties of more than 25,000 population (1910):			
Alameda -----	347	321	195
Butte -----	43	30	16
Contra Costa -----	37	34	21
Fresno -----	132	90	60
Humboldt -----	39	35	16
Kern -----	60	51	33
Los Angeles -----	928	855	516
Marin -----	12	23	117
Orange -----	40	29	110
Riverside -----	41	31	37
Sacramento -----	125	133	106
San Bernardino -----	77	111	38
San Diego -----	128	132	73
San Francisco -----	560	664	342
San Joaquin -----	67	77	43
San Mateo -----	27	15	35
Santa Barbara -----	23	19	15
Santa Clara -----	132	113	79
Santa Cruz -----	26	32	19
Solano -----	24	32	10
Sonoma -----	56	66	23
Tulare -----	60	36	24
Selected groups:			
San Francisco and other bay counties -----	983	1,057	710
Los Angeles and Orange counties -----	968	884	626

*Birth and Death Totals, for Principal Cities: March.*

City.	March, 1913.	
	Births.	Deaths.
Freeholders' charter cities -----	2,155	2,143
Cities of more than 15,000 population (1910):		
Alameda -----	36	22
Berkeley -----	47	42
Fresno -----	59	39
Long Beach -----	44	42
Los Angeles -----	632	554
Oakland -----	234	215
Pasadena -----	39	40
Riverside -----	29	18
Sacramento -----	108	111
San Diego -----	100	102
San Francisco -----	560	664
San Jose -----	52	32
Stockton -----	21	37
Selected groups:		
San Francisco -----	560	664
Oakland, Alameda and Berkeley -----	317	279
Totals, bay cities -----	877	943
Los Angeles -----	632	554
Neighboring cities -----	109	114
Totals -----	741	668



*Causes of Death.*—The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

*Deaths from Certain Principal Causes, with Proportion per 1,000 Deaths, for Current and Preceding Month, for California: March.*

Cause of death.	Deaths: March.	Proportion per 1,000.	
		March.	February.
All causes -----	3,330	1,000.0	1,000.0
Typhoid fever -----	24	7.2	7.1
Malarial fever -----			0.9
Smallpox -----			0.3
Measles -----	8	2.4	2.5
Scarlet fever -----	1	0.3	1.8
Whooping-cough -----	12	3.6	3.7
Diphtheria and croup -----	17	5.1	2.2
Influenza -----	27	8.1	13.2
Other epidemic diseases -----	17	5.1	6.5
Tuberculosis of lungs -----	422	12.7	126.3
Tuberculosis of other organs -----	78	23.4	20.6
Cancer -----	209	62.8	62.1
Other general diseases -----	151	45.4	38.7
Meningitis -----	45	13.5	15.4
Other diseases of nervous system -----	301	90.4	89.1
Diseases of circulatory system -----	583	175.1	170.9
Pneumonia and broncho-pneumonia -----	310	93.1	110.3
Other diseases of respiratory system -----	81	24.3	24.9
Diarrhea and enteritis, under 2 years -----	44	13.2	13.5
Diarrhea and enteritis, 2 years and over -----	24	7.2	5.5
Other diseases of digestive system -----	163	49.0	47.6
Bright's disease and nephritis -----	217	65.2	68.2
Childbirth -----	26	7.8	9.8
Diseases of early infancy -----	126	37.8	30.4
Suicide -----	68	20.4	20.3
Other violence -----	230	69.1	62.1
All other causes -----	146	43.8	46.1

In March there were 583 deaths, or 17.5 per cent of all, from diseases of the circulatory system, and 500, or 15.0 per cent, from various forms of tuberculosis. Heart disease thus led tuberculosis greatly, as for some months past.

Other notable causes of death were: Diseases of the respiratory system, 391; diseases of nervous system, 346; violence, 298; diseases of digestive system, 231; Bright's disease and nephritis, 217; cancer, 209, and epidemic diseases, 106.

The deaths from epidemic diseases were as follows: Influenza, 27; typhoid fever, 24; diphtheria and croup, 17; whooping-cough, 12; measles, 8; and all other epidemic diseases, 18.

The deaths from the three leading epidemic diseases reported for the month were distributed by counties as follows:

Influenza.		Typhoid fever.		Diphtheria and croup.	
Alameda -----	1	Alameda -----	2	Alameda -----	1
Calaveras -----	1	Contra Costa -----	7	Butte -----	1
Kern -----	2	Fresno -----	1	Colusa -----	1
Los Angeles -----	7	Imperial -----	1	Fresno -----	1
Monterey -----	1	Kern -----	1	Humboldt -----	1
San Benito -----	1	Los Angeles -----	3	Los Angeles -----	5
San Diego -----	2	Mendocino -----	1	San Diego -----	1
San Francisco -----	2	Monterey -----	1	San Francisco -----	2
San Joaquin -----	2	Riverside -----	1	San Mateo -----	1
Santa Clara -----	3	Sacramento -----	2	Siskiyou -----	1
Siskiyou -----	1	San Francisco -----	2	Sonoma -----	1
Solano -----	1	Solano -----	1	Tulare -----	1
Tulare -----	1	Stanislaus -----	1		
Yolo -----	1				
Yuba -----	1				
Total -----	27	Total -----	24	Total -----	17



*Geographic Divisions.*—The following table presents data for geographic divisions, including the metropolitan area, or San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), in comparison with the rural counties of Northern and Central California.

*Deaths from Main Classes of Diseases, from Geographic Divisions: March.*

Geographic division.	Deaths: March.										
	All causes	Epidemic diseases	Tuberculosis (all forms)	Cancer	Diseases of nervous system	Diseases of circulatory system	Diseases of respiratory system	Diseases of digestive system	Bright's disease and nephritis	Violence	All other causes
THE STATE	3,330	106	500	209	346	583	391	231	217	298	449
Northern California	327	10	39	22	31	65	46	20	22	25	47
Coast counties	187	5	18	15	19	38	31	14	15	11	21
Interior counties	140	5	21	7	12	27	15	6	7	14	26
Central California	1,782	55	238	119	161	322	222	124	105	196	240
San Francisco	664	15	83	52	48	134	92	50	30	69	91
Other bay counties	393	12	52	29	43	76	50	16	19	46	50
Coast counties	185	8	25	7	28	30	17	8	19	15	28
Interior counties	540	20	78	31	42	82	63	50	37	66	71
Southern California	1,221	41	223	68	154	196	123	87	90	77	162
Los Angeles	855	29	154	50	107	144	86	60	70	39	116
Other counties	366	12	69	18	47	52	37	27	20	38	46
Northern and Central California	2,109	65	277	141	192	387	268	144	127	221	287
Metropolitan area	1,057	27	135	81	91	210	142	66	49	115	141
Rural counties	1,052	38	142	60	101	177	126	78	78	106	146

*Sex and Age Periods.*—The proportion of the sexes among the 3,330 decedents in March was: Male, 2,018, or 60.6 per cent, and female, 1,312, or 39.4 per cent.

The following table shows the age distribution by numbers and per cents, of deaths classified by sex:

*Deaths Classified by Sex and Age Periods, with Per Cents by Age Periods for California: March.*

Age period.	Deaths.			Per cent.		
	Total.	Male.	Female.	Total.	Male.	Female.
All ages	3,330	2,018	1,312	100.0	100.0	100.0
Under 1 year	328	180	148	9.9	8.9	11.3
1 to 4 years	127	56	71	3.8	2.8	5.4
5 to 14 years	90	49	41	2.7	2.4	3.1
15 to 24 years	201	126	75	6.0	6.2	5.7
25 to 34 years	318	208	110	9.6	10.3	8.4
35 to 44 years	371	219	152	11.1	10.9	11.6
45 to 54 years	399	266	133	12.0	13.2	10.1
55 to 64 years	439	285	154	13.2	14.1	11.8
65 years and over	1,057	629	428	31.7	31.2	32.6

This table shows that relatively more females than males died at the age periods under 15 years as well as at 65 years and over, while relatively more males than females died at the age periods from 15 to 64 years.



*Occupations.*—The table below gives, for deaths 15 years and over, the number of men and women for whom such occupation was reported in contrast with those for whom no gainful occupation was shown.

*Deaths, 15 Years and Over, Classified by Sex and Occupation, with Per Cents by Sex, for California: March.*

	Deaths.			Per cent male.	Per cent female.
	Total.	Male.	Female.		
15 years and over-----	2,785	1,733	1,052	62.2	37.8
Occupation reported -----	1,568	1,467	101	93.6	6.4
No gainful occupation-----	1,217	266	951	21.9	78.1

Of the 1,568 decedents for whom occupations were reported the males numbered 1,467, or 93.6 per cent, and the females only 101, or 6.4 per cent.

The following table shows the distribution of male decedents 15 years and over, engaged in the main kinds of occupation.

*Deaths of Males Fifteen Years and Over Engaged in Gainful Occupations, Classified by Kind of Occupation, with Per Cents, for California: March.*

Kind of occupation.	Males 15 years and over.	
	Deaths.	Per cent.
ALL OCCUPATIONS-----	1,467	100.0
Professional -----	85	5.8
Clerical and official -----	131	8.9
Mercantile and trading -----	102	6.9
Public entertainment -----	35	2.4
Personal service, police and military-----	64	4.4
Laboring and servant-----	288	19.6
Manufacturing and mechanical industry-----	306	20.9
Agriculture, transportation and other outdoor pursuits----	449	30.6
All other occupations-----	7	0.5

Of the 1,467 male decedents for whom occupations were reported, 449, or 30.6 per cent, were engaged in agriculture, transportation, and other outdoor pursuits; 306, or 20.9 per cent, in manufacturing and mechanical industry; 288, or 19.6 per cent, in laboring and servant work; and altogether 424, or 28.9 per cent, in professional, clerical and official, mercantile and trading, and all other occupations.

It should be noted that the figures on deaths occurring in different occupations are necessarily affected by the fact that in California a large number of men are engaged in agriculture and other outdoor pursuits, while relatively few follow professional and similar occupations which show small numbers of deaths.



# REPORT OF THE BUREAU OF THE HYGIENIC LABORATORY.

WILBUR A. SAWYER, M.D., Director.

## Ozone Machines.

Several electrical machines are on the market which have for their purpose the conversion of the ordinary oxygen of the air into ozone. These machines are put out by companies which claim for ozone in breathed air health giving and bactericidal powers. Experiments being carried on in the State Hygienic Laboratory show that the products of one of the best known of these machines will kill guinea-pigs before they will destroy bacteria. Therefore, the machine is worthless as far as its sterilizing effect on breathable air is concerned. The principal physiological effect on normal human beings is an undesirable irritation of the respiratory tract. This leaves to the machine only one purpose in the public places in which they are being installed, and that is the concealment of unpleasant odors. As the machines interfere with the public's power to notice the condition of the air which they are breathing, such equipment abets the evasion of furnishing proper ventilation. The presence of an ozone machine in a public place, therefore, shows that there is something to be concealed about the air furnished. The ozone machine, when intended for alteration of air in the presence of human beings, has no legitimate claim to be a hygienic device, but it is rather a cover for those who wish to evade the laws of hygiene.

## Division of Biological Examinations.

*Summary of Examinations made in the California State Hygienic Laboratory during the Month of April, 1913.*

Condition suspected.	Positive.	Negative.	Inconclusive.	Total.
<b>Main Laboratory at Berkeley:</b>				
Anthrax -----		1		1
Diphtheria -----	18	25		43
Gonococcus infection -----	5	9		14
Malaria -----		2		2
Rabies -----	26	2		28
Tuberculosis -----	8	17		25
Typhoid -----	6	12		18
Water pollution -----		1	2	3
Miscellaneous -----		3	1	9
				143
<b>Northern Branch at Sacramento:</b>				
Diphtheria -----	12	19		31
Malaria -----	3	4		7
Tuberculosis -----	1	6		7
Typhoid -----	3	10	1	14
Miscellaneous -----		1		1
				60
<b>San Joaquin Valley Branch at Fresno:</b>				
Diphtheria -----		4		4
Tuberculosis -----	1	3		4
Typhoid -----	1			1
				9
<b>Southern Branch at Los Angeles:</b>				
Diphtheria -----	9	3	2	14
Typhoid -----		2		2
				16
Total number of examinations -----				228



## Division of Preventive Therapeutics.

*Pasteur Treatment for the Prevention of Rabies by the State Hygienic Laboratory during the Month of April, 1913.*

	Treatment commenced.	Treatment completed.
Main laboratory at Berkeley-----	5	8
Northern branch at Sacramento-----	3	1
San Joaquin Valley branch at Fresno-----		3
Southern branch at Los Angeles-----		
Laboratory of Sacramento Board of Health, by deputized bacteriologist -----	1	1
Laboratory of San Francisco Board of Health, by deputized bacteriologist -----	3	14
Laboratory of Los Angeles Board of Health, by deputized bacteriologist -----		1
Laboratory of Letterman General Hospital, Presidio, by deputized bacteriologist -----		1
	17	29

## Public Health Instruction.

*Participation in Instruction in Public Health during April, 1913.*

Main Laboratory at Berkeley:	
Bacteriological instruction outfits sent out-----	3
Bacteriological instruction outfits in use-----	23
Lectures or talks by the Director-----	3
Lectures or talks by the Chief Bacteriologist-----	1

## Division of Epidemiological Investigations.

*Epidemiological Investigations during April, 1913.*

Main Laboratory at Berkeley:	
Special investigations by the Director-----	3
Continuation of the investigation into the methods of spread of epidemic poliomyelitis.	
Beginning of an investigation into the methods of sterilization of library books.	
Beginning of an investigation into the bactericidal efficiency of ozone machines.	
Special investigation by the Assistant Bacteriologist-----	1
Continuation of the study of the virulence of diphtheria bacilli isolated from the throats of carriers.	

## Examination of Ice for Colon Bacilli.

(Bacteriological examinations of seven samples of ice, officially taken by an inspector for the State Food and Drug Laboratory. Undertaken as part of a larger investigation of the State Food and Drug Laboratory.) Report of chemical examination attached.

On September 17, 1912, Dr. Martin Regensburger telephoned to the State Hygienic Laboratory and requested that bacteriological and chemical analyses be made of samples of commercial ice with the object of detecting any pollution which might be present. It was feared that pollution of ice was responsible for some of the typhoid cases existing in the bay region.

Six official samples were secured by an inspector of the State Food and Drug Laboratory. Each sample of ice was brought to the Laboratory as a large cake. A portion of the inner part was taken. The pieces were rinsed with sterile water and were allowed to melt in a sterile container. The sample thus procured was examined according to the standard methods of water analysis of the American Public Health Association. The bacterial count or organisms which developed on agar plates incubated at 37° was determined in each instance and



tests were made in all cases for the presence of colon bacilli. The detailed results of the examinations are as follows:

*Sample No. 1.* Ice from Union Merchants Ice Delivery Company, 656 Bryant street, San Francisco, taken October 3, 1912, at 9.30 a.m. This ice is said to be natural ice from a lake at Boca, California. The sample was taken from a car on the track in San Francisco, by M. O. Alexander, inspector. Bacterial count from enumeration of agar plates was found to be 250 per c.c. In glucose bouillon fermentation tubes no gas was produced even when 1 c.c. of the water was added. In lactose bile no gas was produced for 10 c.c. of the water. The bacteriological examination shows absence of sewage contamination.

*Sample No. 2.* Ice from the Consumers Ice Company, 436 First street, San Francisco. Sample taken on October 4, 1912, at 9.30 a.m. from the storehouse. The ice is said to be made from distilled water. Collected by M. O. Alexander, inspector for the Food and Drug Laboratory. The count from agar plates was 350 per c.c. No gas was produced by 1 c.c. of the water in glucose bouillon fermentation tubes or by 10 c.c. in lactose bile; therefore our tests showed the absence of colon bacilli in reasonable quantities of the ice.

*Sample No. 3.* Ice from the National Ice and Cold Storage Company, Kansas and Division streets, San Francisco. Sample was taken October 7th, at 9 a.m. by Mr. M. O. Alexander, inspector for the Food and Drug Laboratory. The ice was said to be distilled water ice and was taken from the storehouse. The bacterial count made as in the previous samples was 110 per c.c. The absence of colon bacilli was shown as in the previous samples.

*Sample No. 4.* Ice from the Merchants' Ice and Cold Storage Company, Sansome and Lombard streets, San Francisco. Sample taken by Mr. M. O. Alexander on October 8, 1912, at 9 a.m. The bacterial count made as in previous samples was 80 per c.c. The absence of colon bacilli was proved as in the other samples.

*Sample No. 5.* Ice from the Oakland Ice and Cold Storage Company, Oakland, California. Sample taken by Mr. M. O. Alexander, on October 9, 1912, at 9.30 a.m. from the storehouse. It was claimed that the ice was made from distilled water. The bacterial count made as in the previous samples was 17 per c.c. Absence of colon bacilli was proved as in the other cases.

*Sample No. 6.* Ice from the National Ice and Cold Storage Company, 470 Second street, Oakland, California. Sample taken by Mr. M. O. Alexander, from the warehouse, on October 10, 1912, at 1.30 p.m. Bacterial count made as in the previous samples was 120 per c.c. The absence of colon bacilli was proved as in the other examinations.

*Sample No. 7.* Ice from the National Ice and Cold Storage Company, Sixtieth and Lowell streets, Oakland, California. Sample taken from the storehouse by Mr. M. O. Alexander, inspector for the State Food and Drug Laboratory. The bacterial count was 22 per c.c. No gas was produced in amounts of the water up to 1 c.c. This proves the absence of colon bacilli and of sewage pollution.

The bacteriological examinations of the seven samples of ice showed that they were all free from colon bacilli and therefore did not contain sewage pollution in appreciable amounts.



## REPORT OF THE BUREAU OF FOODS AND DRUGS.

M. E. JAFFA, Director.

The regular routine work in connection with the analysis and examination of foods and drugs has been carried out at the State Food and Drug Laboratory during the month of March, 1913.

About ninety samples of foods and drugs were received at the Laboratory. Among the items of interest might be mentioned the examination of chocolates and cocoa. It is evidenced from the correspondence that there is still misunderstanding in the minds of some in connection with the proper labeling of chocolate and cocoa, and for the purpose of clearing up the situation, it is thought best to reprint the Food Inspection Decision bearing on this subject.

### Food Inspection Decision 136.

#### LABELING OF CHOCOLATE AND COCOA.

After consideration of the evidence submitted in regard to the meaning of the terms "chocolate" and "cocoa," the Board of Food and Drug Inspection has reached the conclusion that the definitions laid down in the "Standards of Purity for Food Products," adopted by the Committee on Food Standards, Association of Official Agricultural Chemists, and printed in Circular No. 19, Office of the Secretary of Agriculture, are substantially correct. By these definitions the names "chocolate," "plain chocolate," "bitter chocolate," "chocolate liquor," and "bitter chocolate coatings," are applied to the solid or plastic mass obtained by grinding cocoa nibs without the removal of fat or other constituents except the germ, containing not more than three (3) per cent of ash insoluble in water, three and fifty hundredths (3.50) per cent of crude fiber, and nine (9) per cent of starch, and not less than forty-five (45) per cent of cocoa fat.

"Sweet chocolate" and "sweet chocolate coatings" are terms applied to chocolate mixed with sugar (sucrose), with or without the addition of cocoa butter, spices, or other flavoring materials, and contain in the sugar and fat-free residue no higher percentage of either ash, fiber, or starch than is found in the sugar and fat-free residue of chocolate.

Cocoa, and powdered cocoa, are terms applied to cocoa nibs, with or without the germ, deprived of a portion of its fat and finely pulverized, and contain percentages of ash, crude fiber, and starch corresponding to those in chocolate after correction for fat removed.

Sweet cocoa, and sweetened cocoa, are terms applied to cocoa mixed with sugar (sucrose), and contain not more than sixty (60) per cent of sugar (sucrose), and in the sugar and fat-free residue no higher percentage of either ash, crude fiber, or starch than is found in the sugar and fat-free residue of chocolate.

Cocoa nibs, and cracked cocoa, are the roasted broken seeds of the cacao tree freed from shell or husk.

Milk chocolate and milk cocoa, in the opinion of the Board, should contain not less than 12 per cent of milk solids, and the so-called nut chocolates should contain substantial quantities of nuts. If sugar is added, for example, to milk chocolate, it should be labeled "sweet milk chocolate," "sweet nut chocolate," etc.

When cocoa is treated with an alkali or an alkaline salt, as in the so-called Dutch process, and the finished cocoa contains increased mineral matter as the result of this treatment, but no alkali as such is present, the label should bear a statement to the effect that the cocoa contains added mineral ingredients, stating the amount. Cocoas and chocolates containing an appreciable amount of free alkali are adulterated. In the opinion of the Board, cocoa not treated with alkali is not soluble in the ordinary acceptance of the term. Cocoa before and after treatment with alkali shows essentially the same lack of solubility. To designate the alkali-treated cocoa as "soluble" cocoa is misleading and deceptive.

The list of foods and food products examined comprise jellies, beverages, candies, canned goods, meat products, and as just indicated, chocolates and cocoas.

No Food Inspection Decisions have been received at the Laboratory during the past month.



The subjoined list of Notice of Judgments is at hand from the Department at Washington, and any interested parties wishing copies of the same, should address the Director of State Food and Drug Laboratory, University of California, Berkeley, California.

- Nos. 2084, 2099, 2100—Adulteration of Candy.
- No. 2086—Adulteration of Eggs.
- No. 2087—Adulteration of Figs.
- No. 2088—Misbranding of Claret Wine.
- No. 2089—Adulteration and Misbranding of Apricot Cordial.
- No. 2090—Adulteration and Misbranding of Powdered Stramonium Leaves.
- No. 2091—Alleged Adulteration and Misbranding of Powdered Belladonna Leaves.
- No. 2094—Misbranding of Stomach Bitters; Adulteration and Misbranding of Extract of Peppermint; Misbranding of Cordial.
- No. 2095—Adulteration and Misbranding of Oysters.
- No. 2096—Misbranding of Wine.
- No. 2097—Misbranding of Rice.
- No. 2098—Adulteration and Misbranding of White Pepper.
- Nos. 2103, 2108—Adulteration and Misbranding of Lemon Extract.
- No. 2104—Misbranding of Salad Dressing and Meat Sauce.
- No. 2105—Adulteration of Evaporated Eggs.
- No. 2106—Misbranding of Dr. Bennett's Wonder Oil.
- No. 2107—Adulteration of Evaporated Eggs.
- No. 2109—Adulteration and Misbranding of Turpentine.
- No. 2110—Adulteration of Evaporated Eggs.
- Nos. 2111, 2113—Adulteration of Oysters.
- No. 2112—Adulteration and Misbranding of Extract of Nutmeg.
- No. 2114—Misbranding of Stock Feed.
- No. 2115—Adulteration of Wild Cherry Phosphate.
- No. 2116—Adulteration and Misbranding of Peppermint Extract.
- No. 2117—Misbranding of Dr. Pusheck's Cold Push Treatment No. 12.
- No. 2118—Adulteration of Candy Bantams.
- Nos. 2119, 2120, 2124—Adulteration of Tomato Pulp.
- No. 2121—Misbranding of Olive Oil.
- No. 2122—Misbranding of Molasses.
- Nos. 2123, 2141—Adulteration of Oil of Rosemary Flowers.
- No. 2125—Adulteration of Wheat.
- No. 2126—Adulteration of Apple Chops
- No. 2127—Adulteration of Tomato Sauce.
- No. 2128—Adulteration and Misbranding of Coffee.
- No. 2129—Adulteration of Oil of Lavender Flowers.
- No. 2130—Adulteration and Misbranding of Vanilla Extract.
- No. 2131—Adulteration of Dried Eggs.
- No. 2132—Adulteration and Misbranding of Graham Flour.
- No. 2133—Adulteration and Misbranding of Oil of Lavender Flowers.
- No. 2134—Alleged Adulteration and Misbranding of Canned Corn.
- No. 2135—Adulteration and Misbranding of Extract of Lemon Peel, Extract of Orange, and Extract of Vanilla.
- No. 2136—Adulteration of Sassafras Oil.
- No. 2138—Misbranding of Kummel.
- No. 2139—Adulteration and Misbranding of Shaco-Kauphy.
- No. 2140—Adulteration and Misbranding of Witch Hazel.
- No. 2143—Misbranding of Lemon Extract, Vanilla Extract, Almond Extract, and Orange Extract.
- Nos. 2144, 2150—Adulteration of Prunes.
- No. 2145—Misbranding of Vanilla Flavor.
- No. 2146—Misbranding of Pistachio Flavor, Adulteration and Misbranding of Peppermint Flavor, and Misbranding of Violet Flavor.
- No. 2147—Adulteration of Oil of Cajaput.
- No. 2148—Adulteration and Misbranding of Catsup.
- No. 2149—Adulteration and Misbranding of Linseed Oil.



*Cases Ordered Referred to District Attorneys April 5, 1913.*

Article.	Offense.	Manufacturer or jobber.	Accused dealer.	Locality.
Royal Macaroni----- Witch Hazel----- Cognac Type----- Chopped Meat----- Frankfurter Sausage----- Bologna Sausage ----- (Own make.)	Mislabeled. Sample is short weight. Mislabeled. Contains alcohol not declared. Mislabeled. Label deceiving and misleading. Adulterated. Water substituted for cognac. Adulterated. Contains sulphur dioxide, over 600 mg. per kilo. Mislabeled. Contains cereal not declared. Adulterated. Cereal substituted for sausage. Contains non-permissible coloring matter. Mislabeled. Contains cereal not declared. Adulterated. Cereal substituted for sausage.	Splivalo & Co.----- ----- ----- ----- ----- ----- -----	(Protected by guaranty)--- E. F. Becker----- Red Ribbon Wine Co., Chas Saddler, Prop. Saratoga Market----- Lesser Bros. & Co., Inc.--- C. F. Hornung, Prop., Eagle Meat Packing Co.	San Francisco. Los Angeles. Los Angeles. San Jose. Oakland. San Francisco.



## DEPARTMENT OF BUREAU OF PUBLICATIONS OF HEALTH INFORMATION.

GUY P. JONES, Acting Director.

At this season of the year vacations are being planned by most of the citizens who can afford the luxury, and a few are already enjoying their annual rustication. For the benefit of campers who desire to learn of methods for building a sanitary camp, this Bureau has some publications containing such information, which will be sent free of all cost to any who request it. These publications deal with the disposal of wastes, cesspools and water supply; they are designed for the use of those who may desire to build a small temporary camp, and also for those who may desire to establish a large permanent camp, or for summer resorts.

The approaching season is the time when most of the cases of typhoid fever that occur in the State are contracted and by far the greater majority of them find their origin in the poor sanitation of camps and summer resorts. Too great care in choice of drinking water and in the disposal of waste, can not be observed. It is never safe to drink from a running stream if a dwelling house is located near its banks.



## LIST OF COUNTY HEALTH OFFICERS.

County.	Health officer.	Address.
Alameda	Dr. C. L. McKown	Niles
Alpine*	County Recorder Frank Smith	Markleeville
Amador	Dr. E. E. Endicott	Jackson
Butte	Dr. L. Q. Thompson	Gridley
Calaveras	Dr. Irwin B. March	San Andreas
Colusa	Dr. C. A. Poage	Colusa
Contra Costa	Dr. W. S. George	Antioch
Del Norte	Dr. E. M. Fine	Crescent City
El Dorado	Dr. L. M. Leisenring	Placerville
Fresno	Dr. G. L. Long	Fresno
Glenn	Dr. J. A. Randolph	Willows
Humboldt	Dr. Carl T. Wallace	Eureka
Imperial	Dr. Virgil McCoombs	El Centro
Inyo	Dr. I. J. Woodin	Independence
Kern	Dr. G. M. Bumgarner	Bakersfield
Kings	Dr. Ralph Motherol	Hanford
Lake	Dr. W. E. Upton	Kelseyville
Lassen	Dr. R. W. T. Garner	Susanville
Los Angeles	Dr. E. O. Sawyer	Los Angeles
Madera	Dr. Mary R. Butin	Madera
Marin	Dr. J. H. Kuser	Novato
Mariposa	Dr. F. W. Gallion	Mariposa
Mendocino	Dr. J. Liftchild	Ukiah
Merced	Dr. J. H. Mudd	Merced
Modoc	Dr. John Stile	Alturas
Mono*	Dr. R. A. Cushman	Bridgeport
Monterey	Dr. Garth Parker	Salinas
Napa	Dr. E. G. Smart	Napa
Nevada	Dr. Carl P. Jones	Grass Valley
Orange	Dr. John Wehrly	Santa Ana
Placer	Dr. J. S. Wheeler	Roseville
Plumas	Dr. F. D. Walsh	Quincy
Riverside	Dr. George E. Tucker	Riverside
Sacramento	Dr. Hugh Beattie	Elk Grove
San Benito	Dr. J. M. O'Donnell	Hollister
San Bernardino	Dr. Philip M. Savage	San Bernardino
San Diego	Dr. O. G. Wicherski	San Diego
San Francisco	Dr. R. G. Brodrick	San Francisco
San Joaquin	Dr. H. C. Peterson	Stockton
San Luis Obispo	Dr. H. M. Cox	San Luis Obispo
San Mateo	Dr. W. G. Beattie	Colma
Santa Barbara	Dr. J. C. Bainbridge	Santa Barbara
Santa Clara	Dr. William Simpson	San Jose
Santa Cruz	Dr. W. H. Keck	Santa Cruz
Shasta	Dr. F. Stabel	Redding
Sierra	Dr. R. B. Davy	Downieville
Siskiyou	Dr. F. J. McNulty	Yreka
Solano	Dr. S. G. Bransford	Suisun
Sonoma	Dr. P. A. Meneray	Santa Rosa
Stanislaus	Dr. J. L. Hennemouth	Modesto
Sutter	Dr. E. V. Jacobs	Meridian
Tehama	Dr. W. F. Maggard	Corning
Trinity	Dr. D. B. Fields	Weaverville
Tulare	Dr. W. A. Preston	Visalia
Tuolumne	Dr. Wm. Lyman Hood	Sonora
Ventura	Dr. A. A. Maulhardt	Oxnard
Yolo	Dr. W. J. Blevins	Woodland
Yuba	Dr. J. H. Barr	Marysville